

Serial No.: 10/789,758
Group Art Unit No.: 1645

REMARKS

Claims 13 to 24 are pending in the present application. Claims 13 to 24 stand rejected. The Applicants amend claims 13, 16 and 20 herein. Support for amended claims 13, 16 and 20 can be found, for example, at page 3, lines 12-31, page 4, lines 6-28, page 6, lines 18-20 as well as throughout the examples of the specification. The Applicants cancel claims 14-15 and 23-24 herein without prejudice or disclaimer. No new matter is added.

Objections

The Applicants amend the specification to correct the typographical errors and informalities on page 7, line 18 and the title, respectively; see the "Amendment to the Specification" herein.

Sequence Requirements

In order to comply with the requirements of 35 C.F.R. § 1.821-1.825, the Applicants wish to direct the Examiner to the IFW in PAIR to see that the Applicants submitted a Sequence Listing in response to a Notice of Non-compliance on September 9, 2004. In addition, to further comply with 35 C.F.R. § 1.821-1.825, the Applicants amend the Specification herein at page 6 to include SEQ ID NOs. 1 through 7 as presented in the "Amendment to the Specification." Therefore, the Applicants believe they fully comply with 35 C.F.R. § 1.821-1.825.

35 U.S.C. § 112, second paragraph

Claims 14, 15, 20, 23, and 24 stand rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In particular, the Examiner alleges that claims 14 and 15 are indefinite for containing the abbreviations, "RTS," "RTS*" and "TRAP" as well as the recitation, "equivalent derivatives thereof." The Applicants respectfully submit that the terms RTS, RTS,S, RTS* and RTS,S* are not abbreviations. Rather they are terms understood in the art and are, in fact, disclosed as such in, for example, Jones, *et al.*, *Vaccines* 17:3065-3071 (1999) and Stoute, *et al.*, *N. Engl. Jour. Med.* 336:86-91 (1997). The Applicants submitted both of these references previously with a Form 1449. Furthermore, the specification specifically defines RTS and RTS,S at page 3, lines 10-31. In addition, the specification clearly defines RTS* and RTS,S* at page 4, lines 8-28. The Applicants amend claim 13 herein to recite the malarial antigens RTS,S and RTS,S*, and they delete claims 14-15, accordingly. Amended claim 13 does not recite TRAP or

Serial No.: 10/789,758
Group Art Unit No.: 1645

“immunologically equivalent derivative thereof.” Thus, the Applicants respectfully submit that, as amended, claim 13 is in condition for allowance, while rejection of claims 14 and 15 is now moot.

The Examiner also finds claim 24 indefinite for reciting, “a suitable time.” Furthermore, the Examiner alleges that claims 23 and 24 are indefinite for omitting essential steps. Finally the Examiner finds claims 20 vague in its recitation of WD1001 through WD1007. The Applicants herein cancel claims 23-24 without prejudice or disclaimer, thus, rendering rejection of these claims moot. The Applicants herein amend claim 20 to recite the sequences of WD1001 through WD 1007 by their designated SEQ ID NOs.

The Applicants respectfully submit that in view of the forgoing remarks and the claims as amended, the Applicants have overcome the Examiner's rejection under 35 U.S.C. §112, second paragraph and that rejection should be withdrawn.

35 U.S.C. § 112 first paragraph

Claims 13, 21, 22, and 24 stand rejected under 35 U.S.C. § 112, first paragraph. The Examiner concedes that the specification is enabling for methods of amelioration of *Plasmodium* infection in a patient, but she alleges that it does not, “provide enablement for methods for the prevention of *plasmodium* infection.” Relying on several review articles, the Examiner concludes that the art teaches that a composition for the prevention of malaria would require a, “multivalent, multistage malaria vaccine.”

The Applicants respectfully traverse this rejection. First, the Applicants demonstrate in the application (Example 2) that RTS,S induces an immune response in naïve non-human primates that showed both high titer antibodies and a strong lymphoproliferative response after immunization. Second, the Applicants direct the Examiner's attention to the following publications that suggest that adjuvanted RTS,S can be an effective preventative and ameliorating vaccine. See, for instance, Stoute, *et al.*, *N. Engl. Jour. Med.* 336:86-91 (1997) and Bojang, *et al.*, *Lancet* 358:1927-1934 (2001); both previously submitted. Additionally, see, Nussenweig, RS and Zavala, F., *New England Journal of Medicine* 336:128-130 (1997). 336(2):128-130 (1997); Alonso, *et al.*, *Lancet* 364:1411-1420 (2004); and Van der Perre and Berret, *Lancet* 364:1380-1382 (2004); included herein with the attached Form 1449 for the Examiner's convenience. In particular, Alonso, *et al.* found that RTS,S adjuvanted with AS02A, an aluminum salt adjuvant composition, conferred both protection against infection as well as protection against clinical diseases caused by *P. falciparum*. Taken together with the animal data disclosed by the Applicants in the instant application, the Applicants

Serial No.: 10/789,758
Group Art Unit No.: 1645

respectfully submit that the specification is enabling for preventing disease as well as ameliorating disease with compositions comprising RTS,S or RTS,S* and adjuvanted with CpG.

The Applicants respectfully submit that in view of the forgoing remarks and the claims as amended, the Applicants have overcome the Examiner's rejection under 35 U.S.C. § 112, first paragraph, and that rejection should be withdrawn.

35 U.S.C. § 102(b)

Claims 13, 17 to 21, 23, and 24 stand rejected under 35 USC § 102(b), as being anticipated by Caulfield (WO 98/52962). Specifically, the Examiner alleges that Caulfield discloses an oligonucleotide having the CpG motif with an antigen that can be from *Plasmodium* (i.e., malarial antigens). A single prior art reference anticipates a claimed invention only if it identically shows every element of the claimed invention. *In re Bond*, 15 U.S.P.Q.2d 1566 (Fed. Cir. 1990). The Applicants respectfully submit that Caulfield does not disclose any particular antigen from malaria, nor does it disclose hybrid antigens; specifically there is no mention of RTS,S or RTS,S*. Caulfield simply suggests that CpG adjuvants can be combined with antigens from *Plasmodium*. The Applicants respectfully submit that, as amended, claim 13 now recites a composition comprising, "malaria antigens selected from the group of RTS,S and RTS,S*" and "an immunostimulatory CpG oligonucleotide." Thus, Caulfield does not disclose each and every element of the claims as amended.

The Examiner also alleges that Caulfield "inherently possess properties, which anticipate the claimed invention." The Examiner contends that the burden is on the Applicant to show a novel or unobvious difference between the claimed products and methods and the products and methods of the prior art. Inherent anticipation arises when "the prior art ***necessarily*** functions in accordance with, or includes, the claimed limitations," *Atlas Powder Co v. IRECO Inc.*, 190 F.3d 1342, 1347 (Fed. Cir. 1999). Emphasis added. As discussed above, Caulfield does not disclose any particular antigen from malaria. In her discussion under 35 U.S.C. § 112, first paragraph, the Examiner cites several references that suggest problems with proteins from *Plasmodium* as vaccine components. Thus, the Applicants respectfully submit that if the Examiner's contentions are correct, an immunologic composition comprising any antigen from *Plasmodium* would not ***necessarily*** be expected by the skilled artisan to induce an immune response in a patient or be effective in ameliorating or

Serial No.: 10/789,758
Group Art Unit No.: 1645

preventing disease. Thus, the teachings of Caulfield cannot properly inherently anticipate the claimed invention.

The Applicants respectfully request that rejection of this claim be withdrawn. Because claims 17-21 depend from claim 13, rejection of these claims should also be withdrawn. Claims 23 and 24 are cancelled herein, thus, rendering rejection of these claims moot.

The Examiner also references Jones, *et al.*, noting that Jones, *et al.* mention “compositions comprising malarial antigens and synthetic oligonucleotides containing CpG motif as an adjuvant (abstract).” It is unclear from the Office Action, if the Examiner considers Jones, *et al.* to be anticipatory art. The Applicants respectfully submit that Jones, *et al.* published after the earliest priority date of the instant application. Therefore, Jones, *et al.* is not prior art to the instant application, and rejection of the claims based on this reference is improper.

35 U.S.C. § 102(e)

Claims 13 to 24 stand rejected under 35 USC § 102(e), as being anticipated by Friede, *et al.* U.S. Patent No. 6,558,670. Specifically, the Examiner alleges that Friede, *et al.* disclose a composition comprising an immunostimulatory oligonucleotide, saponin, and an antigen from *P. falciparum*. The Examiner also indicates that Friede, *et al.* teach RTS,S as a possible antigen. The Applicants submit that Friede, *et al.* is directed to immunogenic compositions comprising saponin. The Applicants amend claim 13 herein to expressly proviso out saponins as part of the claimed composition. The Applicants disclose saponins as a possible additional adjuvant for the claimed composition at page 8, lines 30-31 of the application. This disclosure provides support for any proviso of saponins from the claimed composition. See *Engel Industries, Inc. v. Lockformer Co.*, 946 F.2d 1528, 1531, 20 U.S.P.Q.2d 1300, 1302 (Fed. Cir. 1991) (An inventor only needs to support what he claimed in the application. He does not need to support what is not claimed.)

The Applicants respectfully submit that Friede, *et al.*, do not disclose each and every element of now amended claim 13 and rejection of this claim should be withdrawn. Furthermore, the Applicants amend claim 16 accordingly. As claims 16-22 depend from claim 13, either directly or indirectly, these claims are also in condition for allowance. Claims 23-24 are cancelled herein, thus, rendering rejection of these claims moot.

Serial No.: 10/789,758
Group Art Unit No.: 1645

35 U.S.C. § 102(e)

Claims 13 and 16 to 23 stand rejected under 35 U.S.C. § 102(e), as being anticipated by Davis, *et al.* (U.S. Patent No. 6,406,705), Krieg, *et al.* (U.S. Patent No. 6,207,646), or Raz *et al.* (U.S. Patent No. 6,579,940). The Examiner indicates that Davis, *et al.*, disclose compositions comprising “an antigen from a parasite (*i.e.*, a malarial antigen)” with a CpG adjuvant that is between 8 to 100 nucleotides and saponin. Furthermore, the Examiner also summarizes the disclosure of Krieg, *et al.*, and Raz, *et al.* to include parasitic antigens and CpG. The Applicants respectfully submit that Davis, *et al.* merely disclose examples of infectious parasites. They do not disclose any particular antigen, nor do they disclose hybrid antigens such as RTS,S and RTS,S*. Similarly, Krieg, *et al.* and Raz, *et al.* provide only a general disclosure that the antigen may be from a malarial parasite. Thus, none of these cited references disclose each and every element of claim 13 as amended.

The Applicants respectfully submit that in view of the forgoing remarks and the claims as amended, the Applicants have overcome the Examiner's rejection under 35 U.S.C. 102 and that rejection should be withdrawn.

The Applicants reserve the right to prosecute, in one or more patent applications, the claims to non-elected inventions, the cancelled claims, the claims as originally filed, and any other claims supported by the specification. The Applicants thank the Examiner for the Office Action and believe this response to be a full and complete response to such Office Action. Accordingly, favorable reconsideration and allowance of the pending claims is earnestly solicited. If it would expedite the prosecution of this application, the Examiner is invited to confer with the Applicants' undersigned attorney.

Respectfully submitted,
/AndreaVLockenour/
Andrea V. Lockenour
Attorney for Applicants
Registration No. 51,962

GlaxoSmithKline
Corporate Intellectual Property - UW2220
P.O. Box 1539
King of Prussia, PA 19406-0939
Phone (610) 270-7568
Facsimile (610) 270-5090

c:\documents and settings\avl15441\my documents\b45187e\oa 1 response.doc